Notebook, PN-19-04-00

This pocket notebook was probably used by Edison around 1899 for notes on chemicals, chemical reactions, cement, and experiments and projects to be undertaken. It consists of a promotional notepad distributed by the Standard Oil Co. and may have been used at Edison's winter home in Fort Myers, Florida. Included are a variety of chemical notes alluding to Henry Watts's multivolume *Dictionary of Chemistry*; notes on real estate, probably in the Fort Myers area; and notes on the chemical properties and varieties of cement. Among the experiments listed are several that involve "xyz rays." The book has been used in both directions. The last page contains a printed calendar for 1896 and an inscribed date of April 1919. That date may relate to the four- and five-digit numbers, possibly battery cell numbers, on the adjacent page and to similar numbers a few pages away. The front cover is stamped "Compliments of Standard Oil Company, Newark Branch, Newark, N.J." The pages are unnumbered. Approximately 35 pages have been used.

Our Standard Lubricating Oils.

CAPITOL CYLINDER OIL
MODEL CYLINDER OIL
SHIELD CYLINDER OIL
RENOWN ENGINE OIL
ELDORADO ENGINE OIL
ELDORADO CASTOR OIL
ATLANTIC RED ENGINE
MAGNETO MACHINERY
EXTRA GOLDEN MACHINERY
GOLDEN MACHINERY
UNION THREAD CUTTING OIL
WOOL OILS MINER'S OILS
LEATHER OILS GREASES
EMERALD BOILER OIL
ALL VACUUM OIL CO.'S BRANDS
600 W. CYLINDER OIL
ARCTIC ENGINE OIL
AND ALL PRODUCTS OF
PETROLEUM

Patented 1883, Mills, Haight & Co., Boston, N. Y. and Chicago.

STANDARD OIL CO., NEWARK, N. J.
Manufacturers and Dealers in all Products of Petroleum.

Mercuro-chloride of
Cerium Colorless
Cubes

Chrysamminates
remarkable Crystals
towards light.

Its a Condensation
product oxy-thiosulphate
based -

Arsenic pentasulphide
gives large number
double salts
Lowitz 3rd Sup 129

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Leland

Peroxides Ba Sr Ca insoluble
precipitate Hydrate within Carbon
plates & place them in solution
Peroxide Hydrogen —

Iodates of heavy metals Fe etc
insol + Easily give up 3 at
O — heavy Iodide of the
metal —

Ferric hydrate completely
dehydrated by trying up to
168 @ 200 cent in Conc
Sol of Chloride Calcium or
Sodium

Make Pearl Oil Illu. Gas
Ferric Hydrate described
Watts. p. 395. There may be
the oxide of iron from Monosulphide
there is 2 or 3 ways of making
by all
1 ditto Oxychloride top pp 378
Watts 379 —

See Watts 2nd Sup p 657
abt Ferric Chl —

Make some Magnetic
Hydrate + dry + test on
grid for storage for Oxy/Chl
element + also for
Oxide + the proportions that
it takes to be used in delaunde
make several pie plates full —

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also make mixture of $FeCl_2$
+ Fe_2Cl_6 in right proportions
put in Carbon plate + ~~oxid~~
try for Delaunde

Nitride of Iron. Easily made
85% Iron. 1st Sup Watts. p 757

to get rid of basic salts when apply
Ni salts by Soda, boil the precip —

It is possible that actually sol
(the formula of Iron oxide
hydroxide formed (drawn)
matter when boils)
Ni + Fe are pp from
boiling acetate solution
of their formates
or their sulphates by Zinc dust

Dry ppta barium
Fe from also Ferric chl
by Zinc dust + Est of
Ex Zn by very weak
acid —

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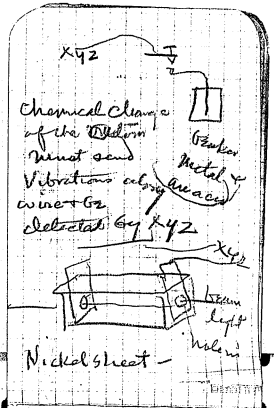
Loco	200
Broke	150
Ballast	145
Top	200
3 64	150
Engr.	250
Oyster	150
Cleaner	125
Top Dyer	150
Furnace	175
Sampler	125
Nurse	175
Topman	175
	2170



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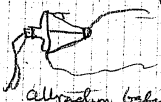
Try continuous — intermittent Gas and Liquids that absorb certain waves of light, Entering beam absorbed at right end hence a waves will pass via wires —
Try Conducting & Non Conducting liquids & metals —

Make telephone or
try highly crystalline
Cast steel or fluorite



although believes
the Crystals Broke a
Kinked when current
passes — try best
thermo alloy

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Petroleum.

Thorite phosphorescing by
heat & then loses its
capacity — This is restored
by electricity = for
fluorescent lamps

~~Cast steel fluorite rocks~~
~~The heat of the reflect of~~
~~heat~~ ~~pass~~ ~~current through~~
~~to~~ Combine a heating
or Electrifying device
together so it will
not lose its power

Select 1/2 dry Coal
Thermo alloys +
melt + pour in
Concentrated field
of mag + other 1/2 outside
test etc. of any differences

In Electric furnace
make alloys of
Rare Metals by using
Oxides etc + reducing by
Charcoal, Sugar Charcoal etc
etc also with a common
metal + oxide of a Rare
Etc =

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Pass a strong Current thro
the Vacuum deposit on
glass of gold plat Silver
Copper, Nickel + at
same time notice any
Changes of a Beam of
light by Zys + Spectroscope
also Try it in bridge
see if slight X Ray
Radiation that Magnetism
Changes Rad —

C E Reed
Bartow Tube Wks
Works Bartow Fla

Possibly a storage battery can be obtained with Ni and say Vanadium as a depolarizer or other metal with ammonia or the solution or Chl ammine, with ammonia

The reason I did not get good results with Bismuth is that I did not try it for a depolarizer I did not have graphite — Try it again

Bismuth pentoxide is obtained by heating Bismuthic acid to 130 C at this an exothermic unstable oxide when heated gives O also when heated with H_2SO_4 — & Chlorine when heated with HCl —

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This return is somewhat like nickel —
Bismuthic acid is obtained by passing Chlorine into KOH containing Bi trioxide in suspension. This again is like nickel —
Bismuthic acid is unfortunately a little sol in KOH —

Gold tri hydroxide decomposes when exposed to light giving off O —
Photo for XYZ,
Chloro-auric acid
Bromide light
Photo XYZ

When excess lime water added to platinic Chloride + exposed to daylight a white or yellowish precip of platinate of lime thrown down

Phals X Y Z

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Hugh McDonald
Left next to Langford
35 large trees
Some grapefruit out
1 acre - 210 ft on
River highest
bank in town,
$26 50 —
180 ft deep on main st

McCl respondl ace about
7 acres — $6 000 —
pretty near all trees.

2 1/2 acres all in trees
200 trees — $2000 —
Next time —

4 acre piece 300 yards
from my place located
town, 2500 not
improved —

Mrs Bates 1 1/2 acres
House on it fairly good —

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asking 4000, think
can be bought for
3 or 3500 —

[THIS BOOK WAS USED IN BOTH DIRECTIONS. THE FOLLOWING PAGES WERE FILMED FROM THE BACK END FORWARD.]

Illuminating Oils.

PRATTS ASTRAL OIL,
DEVOES BRILLIANT OIL,
WESTMINSTER OIL,
SPECIAL BURNING OIL,
WHITE ROSE OIL,
IMPERIAL BURNING OIL,

Above brands are all 150 W. W., and guaranteed to be the best.

STOVE GASOLENE FOR VAPOR STOVES,
AND ALL GRADES OF BENZINE,
NAPHTHA AND GASOLENE.

Standard Oil Company,
NEWARK BRANCH,
NEWARK, NEW JERSEY.

C. E. YOUNG, Manager.

Dispensing Pads for use in this cover may be had upon application to Standard Oil Co., Newark, N. J.

1637 25%

1071 15%

1046 — 25%

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Petroleum.

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Total weight of a truss is as to the square of its length,

The amount or lbs of steel per foot of span is directly as to the span

20 ft span 6146 lbs per ft
40 129

but total wt goes as the square

20 ft Total wt 129 lbs
40 516

Ties in a pink truss are only 3/10th of its online weight.

In a Funk bins if with a rise of $\frac{1}{2}$ the weight is 8000 lbs the raise is reduced to 1/10th the weight will be 16000 lbs.

Portland Cement
In large work "Displacers" can be used - Each must not be nearer than 12 inches ≈ well grouted around it.

A cement requiring 2 hours or more to set is called a slow cement

Cement is sound) slow setting by long storage, its tensile strength increases if kept dry & in a place free from draughts. (German Spec)

French reject cement containing over 1% Sulphuric acid or sulphur in weighable quantities or 4% oxide SO or give a value lower than $\frac{44}{100}$ for the proportion between the base weight of the combined Silica & Alumina in the first part & weight of the lime in the other part

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1130 20

1124 ~~25~~ 50

1124 5

1128 40

1124 15

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Setting properties of Cement can be hastened to any extent (or) modified by prolonged aeration, Butler page 286

A cement is aerated in very damp weather (or) are laden with moisture Exposed portions beable to be Congelated or what is known as air set by which a great part of its volatility and CO2 lost

Aeration increases bulk of Cement as much as 6% as it absorbs water + CO_2

Aggregate + sand should have no dust + surface should be rough + porous

The greater the quantity of Aluminum present the quicker the setting. Being the most active ingredient it supersaturates the water first & commences to crystalize

It is preferable that a cement should contain less than 3% Magnesia the less the better —

Well burnt clinker dark porous & slightly underburnt is lighter. Underburned still lighter while much underburnt is yellow —

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A cement spread out on a tray for 3 years gave as good results as healthy portion in a closed can.

If a cement containing gypsum is permitted to stay in bulk stick for several days it developes poor strength at the early date of testing

General retardation of setting by gypsum due to formation of Sulphis-aluminate lime

No aluminate of lime is dissolved ~~when~~ in water, when a mixture of sulphate Lime & Slaked lime is shaken up with water. The aluminate of lime in Cement is thus hydrated slowly

Aluminate of Lime is the cause of rapid setting

If there is no free lime in the Cement gypsum will not prevent the rapid setting. To a certain Cement gypsum was added. It act in 30 minutes on neutralizing free lime by Carb Soda. It act in 30 minutes without adding No gypsum

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A cement containing gypsum exposed to the air ~~[illegible]~~ slowly becomes quick setting. Add a small quantity of slaked lime be added it is considered above setting. The free lime previously in had become Carbonated by the absorption of CO_2 from the air

Gypsum is generally mixed with the clinker before grinding but it not easy to do it properly

Cement containing an excess of clay is generally very quick setting & is never very strong

Cement can be used
20 deg below zero if
Hot water with salt in it
is used, There is an after
Efflorescence

Lime combined as silicates
& aluminates are the active
ingredients of Cement the
quantity the % of these
strengths the Cement,

2 Cement having same
analysis, ground & burnt
the same degree of hardness
one good the other utterly
bad because personal one
had the ingredients badly
mixed

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2% gypsum added to Cement in a
closed flask
Initial set after mixing

1 day	3 hours
1 month	2 h 50 m
2 "	1 h 30 m
5 "	10 min

Shows cement with gypsum should
not be stored over 2 months.

1 Sample Cement, initial set

0.5% gypsum		7 minutes
1.0% "		50 "
1.5 "	2 H	40 "
2.0 "	2 "	57 "
3.0 "	3 "	
4.0 "	3 "	30 "

gypsum generally increases
strength Cement rubber less
than 2%

Aluminate of Lime is insoluble in the saturated Solution of Lime

2% Gypsum allowable. but mixing cements seemed sufficiently slow settling with 1/2 percent.

long aeration will do same, thus no gypsum, the aluminate of lime becoming air hydrate.

~~but little air entrapped~~
~~Cement is from lime some aluminate~~

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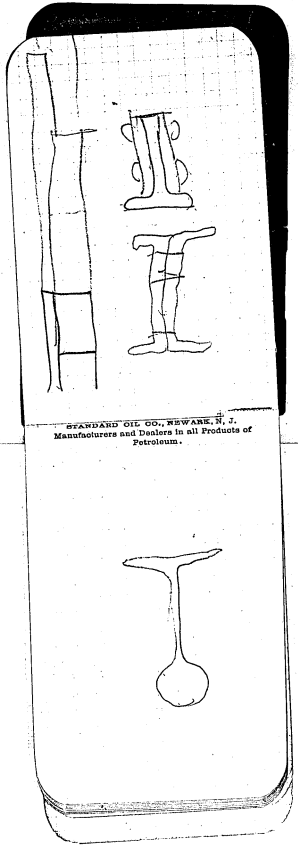
A cement which blowed by Faraas test became sound. Same when ground to pass 180 mesh by same test.

The defect of fine grinding was to cause cement to set quicker, the aluminate of lime dissolving & Gypsum coagulating with great rapidity —

Same Cement put		Tensile
32 g Cement	5 cc H_2O	412
"	6 "	440
	7 "	367
	8 "	314
	9 "	214
	10 "	182

5 cc too dry. 6 cc is right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Dand Coal first Coal both
treat-ment showed to
make — defect of sand —
that it requires 28 days
to be of value —

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